Experiment Title: DNA Electrophoresis of VNTR PCR Products

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Lab Section: BIO 1120L – Section 03

Instructor: Christina Minassian

Reagents and Equipment:

* Beaker
* Microcentrifuge tubes
* Ice
* Pipette
* PCR sample with plasmid DNA
* 1 kb DNA ladder
* 2% agarose gel
* SYBR Safe DNA stain (or substitute)
* Electrophoresis chamber and power supply
* Transilluminator

Summary:

In this lab, we will complete the final step of our DNA analysis, which includes electrophoresis of the DNA we previously isolated and amplified using PCR. This time, we will pour our own 2% agarose gel, prepare our PCR samples with a loading dye, and carefully pipette 24 µL of the PCR product into the assigned wells. We will also include the 1 kb DNA ladder for size comparison.

Once all samples are loaded, our instructor will apply a 120V electric field to run the gel for approximately 45 minutes. Since DNA carries a negative charge, it will migrate through the gel toward the positive electrode, with smaller fragments moving faster than larger ones.

We will monitor the dye’s progress and notify the instructor when it nears the edge of the gel. After the run, the gel will be placed under a transilluminator to visualize the DNA bands, and a digital image will be captured. The band pattern will help us determine the size of our PCR-amplified VNTR fragments using the 1 kb ladder for comparison.